

JBL

GT5-A3011

1 CHANNEL POWER AMPLIFIER

SERVICE MANUAL



JBL Consumer Products

250 Crossways Park Dr.

Woodbury, New York 11797

Rev0 11/2008

Released 2008
Discontinued XXXX

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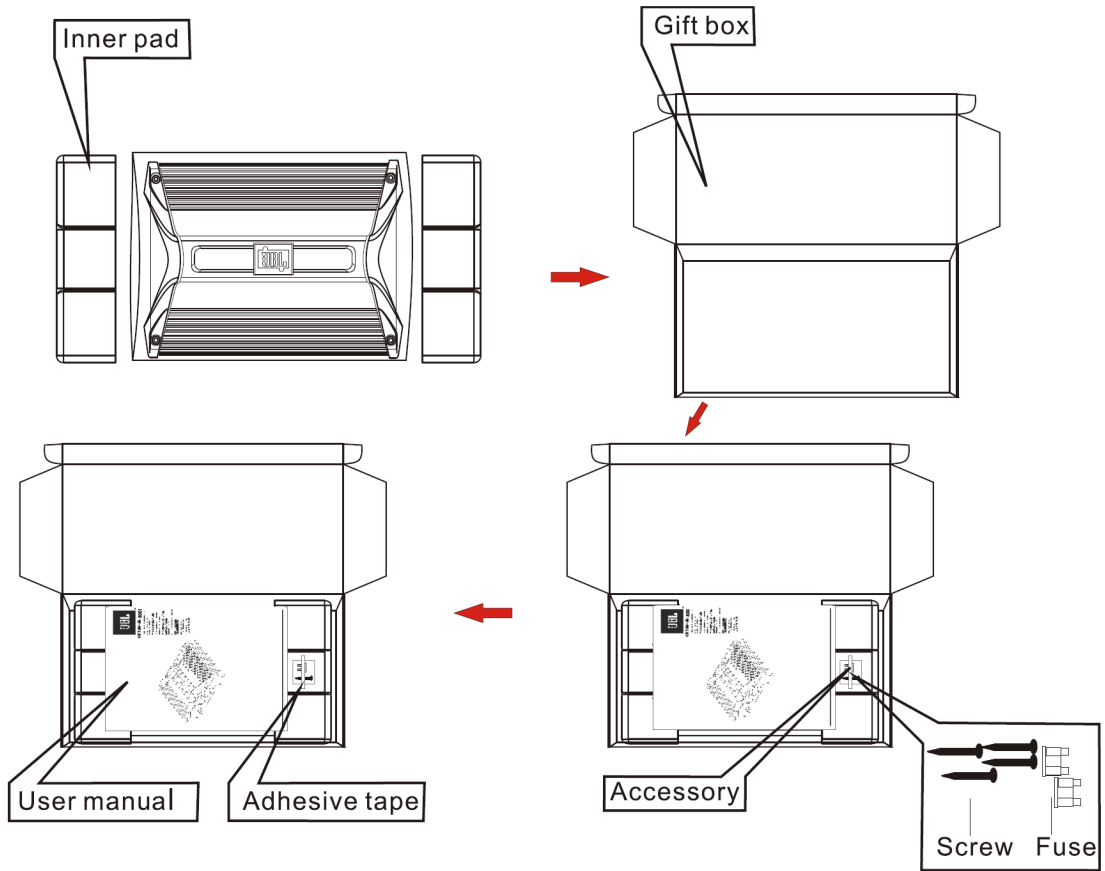
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GT5-A3011 Specifications

Output Power:	200W RMS x1 channels @ 4 ohms; ≤1% THD + N
(14.4V supply)	300W RMS x 1 channels @ 2 ohms; ≤1% THD + N
Signal-to-noise ratio:	95dBA (reference 1W into 4 ohms)
	120dBA (reference rated power into 4 ohms)
Total Peak power:	600W
Frequency response:	10Hz – 300Hz (–3dB)
THD+N 1KHz LPF=22KHz	≤0.05% (rated power @ 4 ohms)
Input Impedance	10kΩ
Maximum input signal:	6.0V
Maximum sensitivity:	200mV
Hi-Pass, Low Pass X-over Limits	32Hz – 320Hz ±20% 12dB/oct
DC Offset	<30mV
Output regulation:	46dB
Idle Current @ 4 ohms	400mA
Max Current Draw	≤20A
Remote Operating Voltage	5V
Turn-on delay time	3 sec
Circuit Protection	Temperature (85±5C), Short circuit, Operating voltage range (8-16V)
Dimensions:	2 1/8 x 9 1/4 x 12" (54 x 235 x 305mm)
Fuse:	2 x 20A

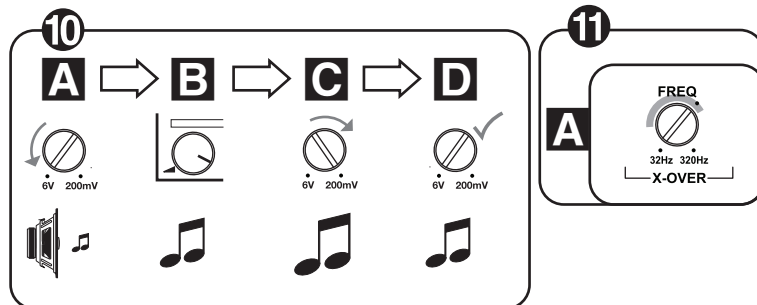
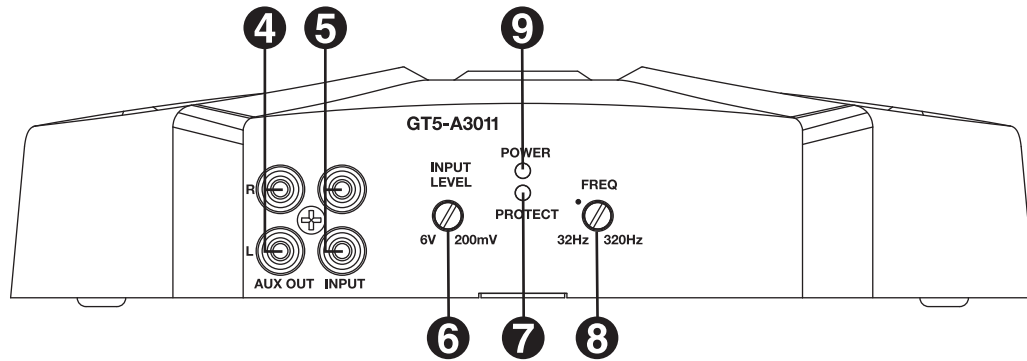
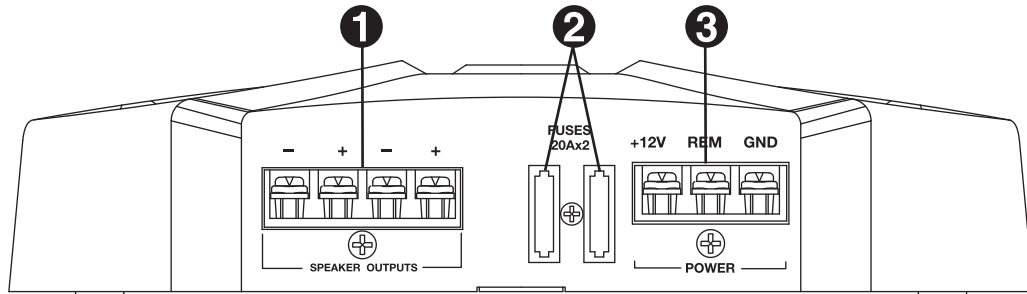
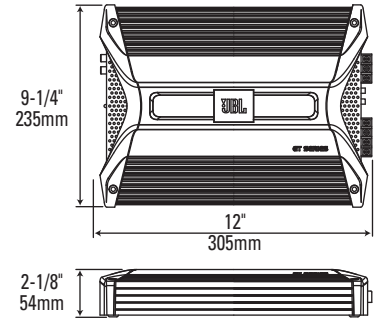
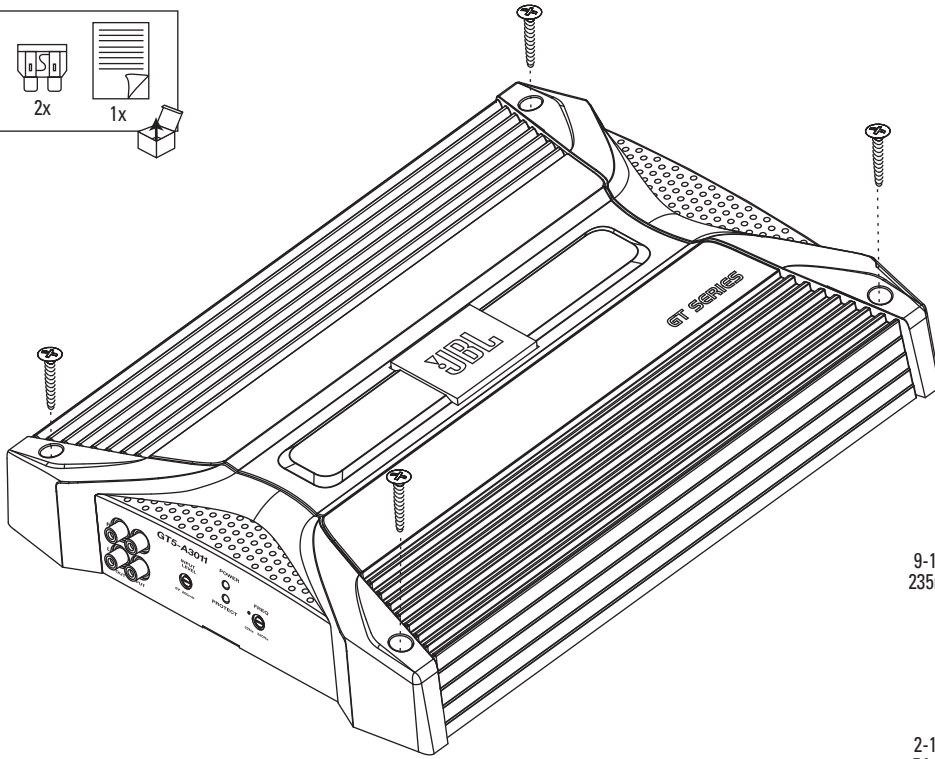
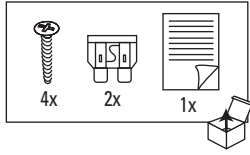
JBL continually strives to update and improve existing products, as well as create new ones. The specifications and details in this and related JBL publications are therefore subject to change without notice.

GT5-A3011 PACKAGE



Name	Part no	Q'ty
Carton box		1/4 PCS
Gift box	GIFT-BOX-3011	1 PCS
Poly bag		1 PCS
Dryer		1 PCS
Manual	visit www.jbl.com	1 PCS
Inner pad	SNOW-B	2 PCS
ACCESSORY		
Screw	SCR-BH4-50NI	4 PCS
Fuse	FUSE-20A	2 PCS
Poly bag		1 PCS

NO		PART'S NAME			MATERIAL		Q'TY	SPECIFICATION	REMARK
FRD	DIN	A	B	C	UNIT	SCALE	DATE	MODEL	GT5 - A3011
		THIRD ANGLE						MM	2008.11.06
1~10	0.05	0.1	0.2					NAME	PACKING DRAWING
10 ~ 100	0.1	0.2	0.3	DRW	CHECK	APPRO			
100 ~ 500	0.2	0.3	0.5						
500 ~	0.3	0.5	1.5						



GT5-A3011 CAR AUDIO SUBWOOFER AMPLIFIER OWNER'S MANUAL

Installation Warnings and Tips

- Disconnect the negative (–) lead from your vehicle's battery.
- At the installation sites, locate and make a note of all fuel lines, hydraulic brake lines, vacuum lines and electrical wiring. Use extreme caution when cutting or drilling in and around these areas.
- Choose a safe mounting location away from moisture.
- Make sure there is sufficient air circulation at the mounting location for the amplifier to cool itself.
- Mount the amplifier, using the supplied hardware.

1 Speaker Output Connectors

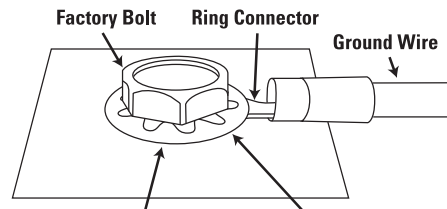
- Connect the subwoofer to these terminals, observing proper polarity. Either + or – terminal may be used. Minimum total impedance is 1 ohm.

2 Fuses

- Replace only with the same type and rating.

3 Power Input Connectors

- +12V: Connect to the positive terminal of the vehicle's battery. 8 AWG wire is recommended. Install an appropriate fuse holder and fuse (40A minimum) within 18 inches of the battery. Make sure the wire is not damaged or pinched during installation. Install protective grommets when routing wires through the firewall or other sheet metal.
- GND: Connect to the vehicle's chassis. Refer to the picture below.



Note: Remove any paint below ring connector.

- REM: Connect to the "Remote Out" lead from the source unit or to a source of switched +12V (ACC).

4 Aux Output Connectors (RCA)

- Nonfiltered pass-through output. Connect to the input of an additional amplifier.

5 Input Connectors (RCA)

- Connect to the RCA outputs from the source unit or signal processor.

6 Input-Level Control

- Used to match the input level of the amplifier to the output level of the source unit.
- See 10 for the adjustment procedure.

7 Protect LED

- Illuminated under any of the following fault conditions: battery over/under voltage, short circuit in speaker wires, amplifier is too hot, amplifier's output circuit has failed (DC voltage is present in the amplifier's output).

8 Low-Pass Filter Frequency Control

- 12dB/octave low-pass filter, variable from 32Hz to 320Hz.
- See 11 for the adjustment procedure.

9 Power On LED

- Illuminated when the amplifier is on.

10 Setting Input Level

- Turn Input Level control counterclockwise to 6V (minimum).
- With a dynamic music track playing, turn the head unit's volume control to the 3/4 position.
- Turn Input Level control clockwise until the bass output is proportionate to the output of the high-frequency speakers, according to your preference.
- Input level is now adjusted correctly.

11 Setting the Crossover

- Crossover setting for subwoofers.
- Note:** Acceptable frequency ranges are indicated in gray.

Amplifier Troubleshooting Guide

1. Status LED on Amplifier not Lit - Head Unit (Source) Turned ON

Verify:

- A. Remote turn-on wire from source to amplifier has proper voltage
- B. Power (B+) connections at amplifier, terminal blocks, and battery are secure
- C. Ground (GND) connections at amplifier and vehicle chassis are secure
- D. Battery B+ fuse (if used) is OK
- E. Amplifier fuse is OK
- F. B+ at battery and B+ at amplifier has proper voltage

2. Status LED's Lit, No Output from Speakers in Normal Operating Condition

Verify:

- A. RCA cables from amplifier to source are securely connected
- B. Volume adjustment on amplifier is correctly adjusted
- C. Source is ON and playing

3. Engine Noise From Speaker(s)

Turn source OFF, Disconnect RCA cables at amplifier. If noise stops, check equipment & cables leading to amplifier.

Verify:

- A. RCA cables are of good quality with no breakage to internal shields
- B. RCA cables from source to amplifier are not run alongside any power cables

4. Amplifier Output Distorted Music

Verify:

- A. Source output music to amplifier is not distorted
- B. Source output sensitivity is correctly adjusted

5. Amplifier Shuts Down, Green LED's are Lit - Amplifier is in Thermal Protection Mode

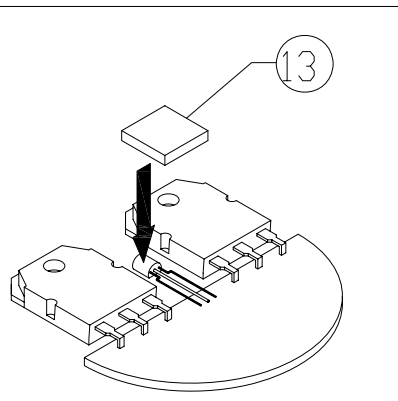
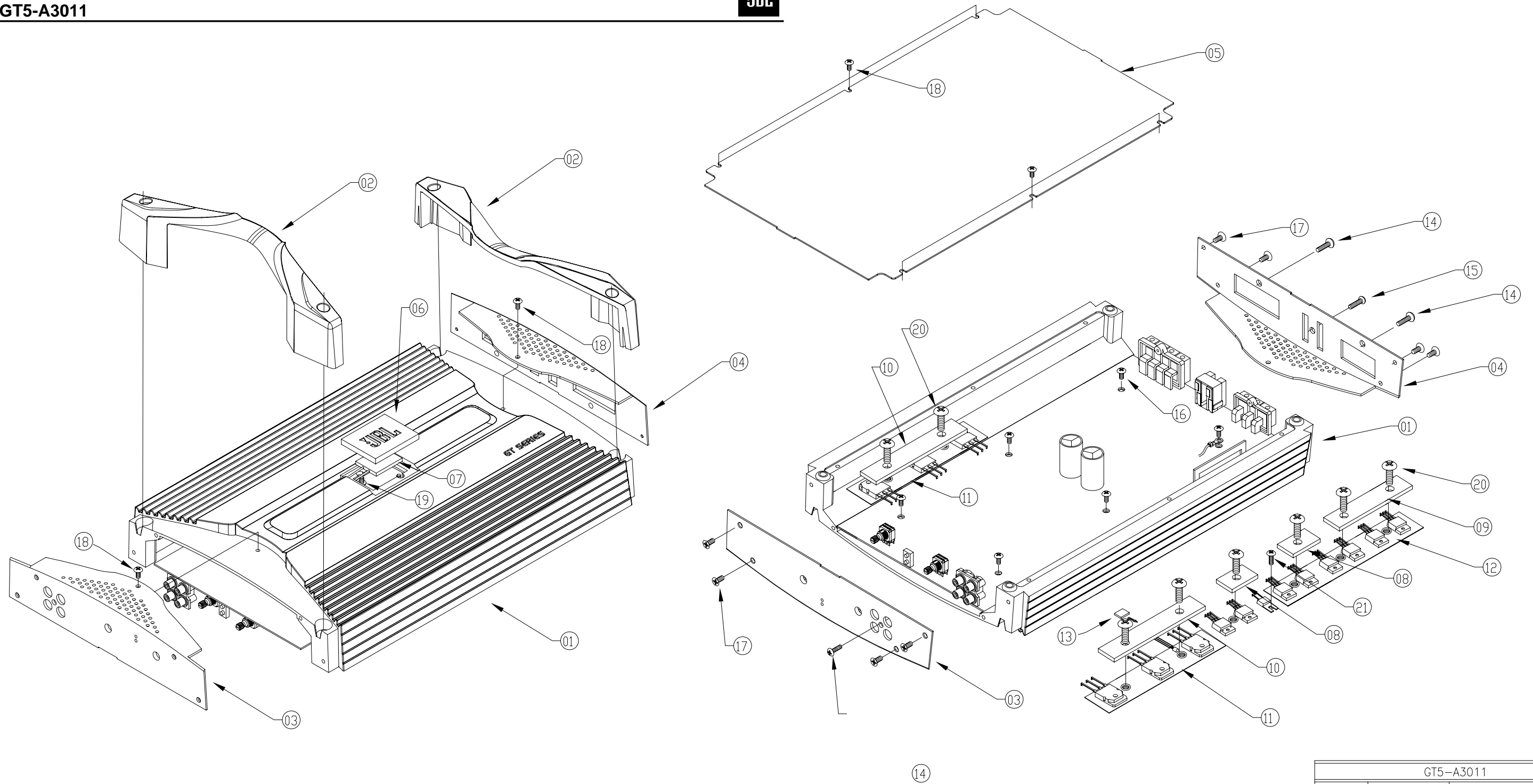
Verify:

- A. Amplifier is mounted with adequate air circulation around heatsinks or vents
- B. Amplifier is not mounted under carpet or sealed enclosure
- C. Speakers meet correct impedance for application (mono or stereo hookup)

6. Amplifier Does Not Turn ON, and Red LED is Lit Amplifier (and not Connected to a Shorted Speaker)

Verify:

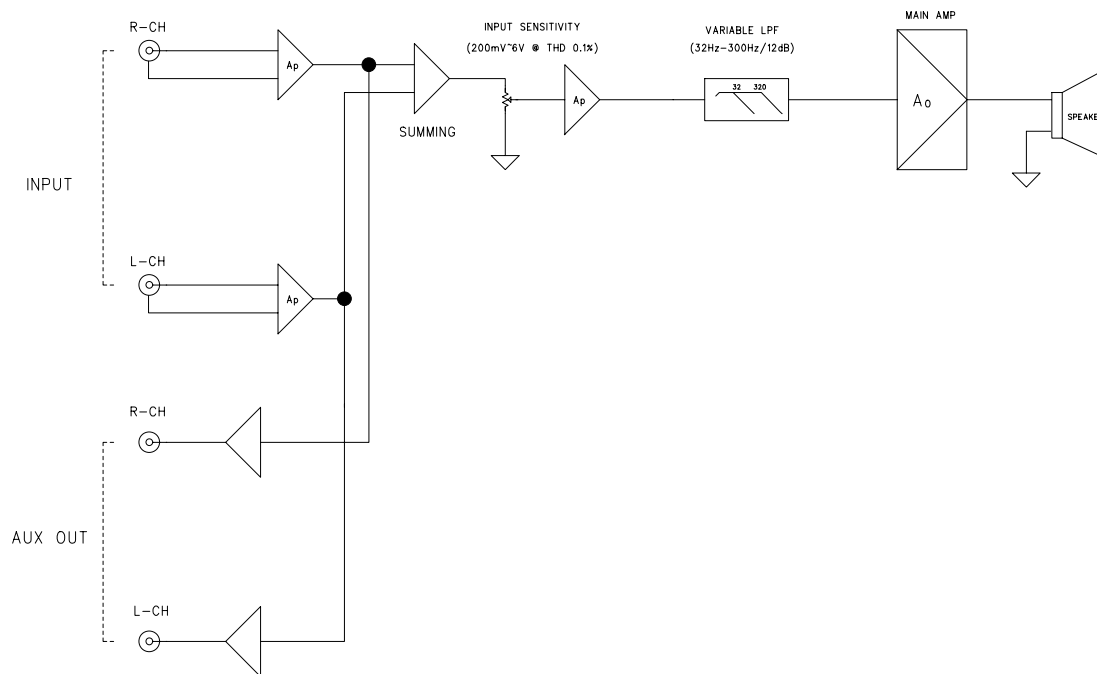
- A. Speaker crossover (if used) is not defective



GT5-A3011			
MARK NO.	DESCRIPTION	PART NO.	Q'TY
01	HEATSINK	HEA-GT3001	1PCS
02	END CAP	END CAP	1PCS
03	FRONT PANEL	PAN-FGT3011	1PCS
04	REAR PANEL	PAN-RGT3001	1PCS
05	BOTTOM COVER	BOTC-GT604	1PCS
06	NAME PLATE	LOGO-B-PC	1PCS
07	LED	LED1	1PCS
08	CLIP"A"	JIG-30-15	2PCS
09	CLIP"B"	JIG-61-15	1PCS
10	CLIP"C"	JIG-74-15	2PCS
11	SILICON PAD"A"	PAD-80-23	2PCS
12	SILICON PAD"B"	PAD-100-23	1PCS
13	RUBBER	RUB10-10-2	1PCS
14	SCREW	SCR-BH3-8BK	3PCS
15	SCREW	SCR-PH3-8BK	1PCS
16	SCREW	SCR-MB3-6NI	6PCS
17	SCREW	SCR-FH3-8BK	8PCS
18	SCREW	SCR-MB3-6BK	8PCS
19	SCREW	SCR-BH3-5NI	2PCS
20	SCREW	SCR-MB4-14NI	8PCS
21	SCREW	SCR-BH3-6NI	1PCS

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

GT5-A3011



DRAWN: B.I.SONG		DATE: Oct.14.2008		COMPANY: HCG	
CHECKED:		DATE:		TITLE: GT5-A3011	
QUALITY CONTROL:		DATE:		CODE:	SIZE: A1
RELEASED:		DATE:		SCALE: NS	SHEET: 1 of 1

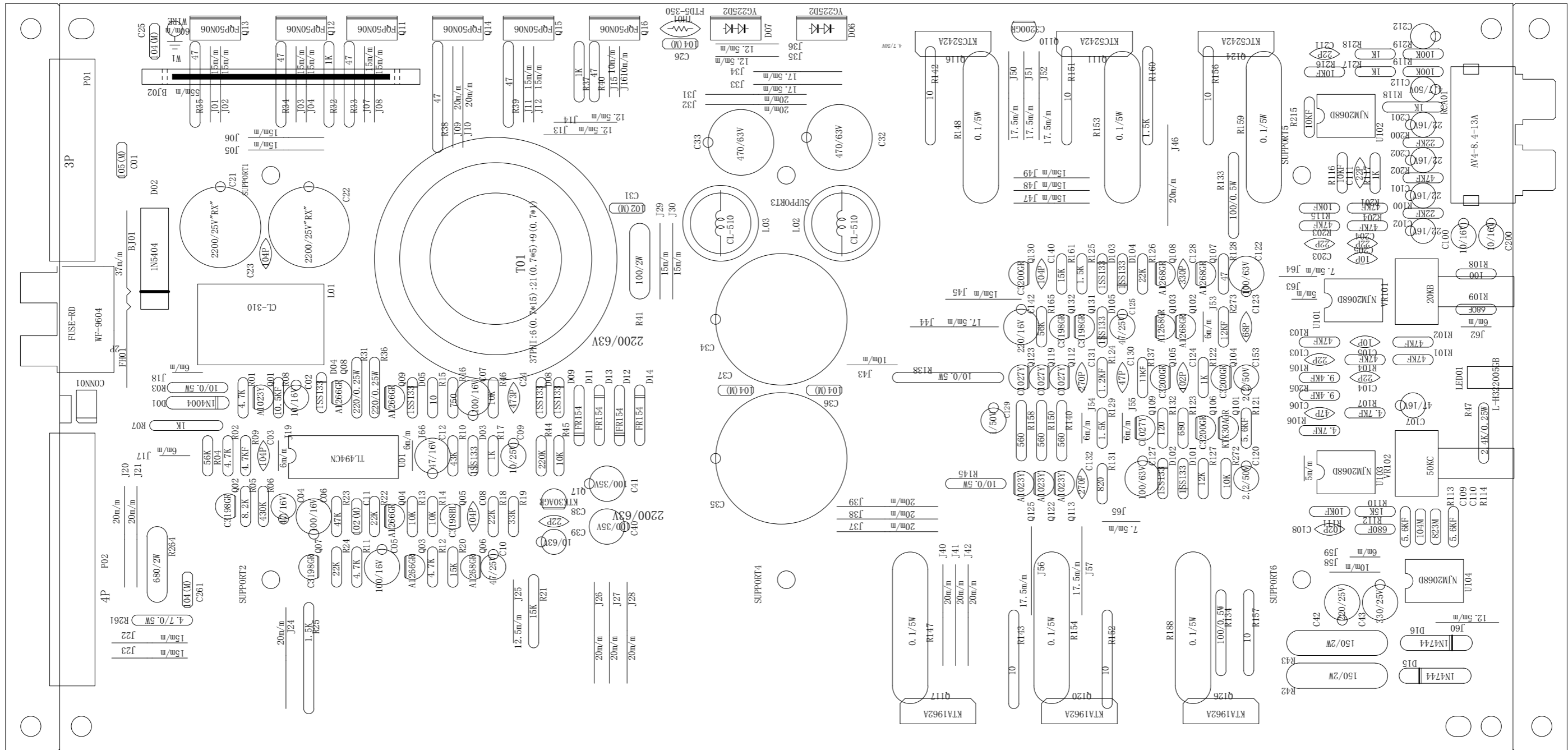
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C
B
A

GT5-A3011 Electrical Parts List				
Part Number		Description	Qty	Reference Designator
MAIN PCB				
<i>Capacitors</i>				
CAP0501R0-E	Capacitor	ELECTROLYTIC"MHA" ,5*11m/m1/50V	1	C129
CAP0502R2-E	Capacitor	ELECTROLYTIC"MHA" ,5*11m/m2.2/50V	2	C120,153
CAP0504R7-E	Capacitor	ELECTROLYTIC"MHA" ,5*11m/m4.7/50V	2	C112,212
CAP016100-E	Capacitor	ELECTROLYTIC"MHA" ,5*11m/m10/16V	3	C02,100,200
CAP025100-E	Capacitor	ELECTROLYTIC"MHA" ,5*11m/m10/25V	1	C09
CAP063100-E	Capacitor	ELECTROLYTIC"MHA" ,5*11m/m10/63V	1	C39
CAP016220-E	Capacitor	ELECTROLYTIC"MHA" ,5*11m/m22/16V	4	C101,102,201,202
CAP016470-E	Capacitor	ELECTROLYTIC"MHA" ,5*11m/m47/16V	3	C04, 06,107
CAP025470-E	Capacitor	ELECTROLYTIC"MHA" ,5*11m/m47/25V	2	C10,125
CAP016101-E	Capacitor	ELECTROLYTIC"MHA" ,5*11m/m100/16V	3	C05, 07 12
CAP025221-E	Capacitor	ELECTROLYTIC"MHA/SD"220/25V	1	C42
CAP025331-E	Capacitor	ELECTROLYTIC"MHA/SD"330/25V	1	C43
CAP035101-E	Capacitor	ELECTROLYTIC"MHA/SD"100/35V	2	C40 41
CAP016221-E	Capacitor	ELECTROLYTIC"MHA" ,6*12m/m220/16V	1	C142
CAP100102-M	Capacitor	MYLAR,100V 5%102(M)	2	C11 31
CAP100683-M	Capacitor	MYLAR,100V 5%683(M)	1	C110
CAP100104-M	Capacitor	MYLAR,100V 5%,BOX or TL104(M)	6	C25 26 36 37 109 261
CAP063105-M	Capacitor	MYLAR,63V 5%,BOX or TL105(M)	1	C01
CAP050100-C	Capacitor	DISK TYPE, CERAMIC, 50V"NPO"10P	2	C105.205
CAP050220-C	Capacitor	DISK TYPE, CERAMIC, 50V"NPO"22P	7	C103,104,111,203,204,211,38
CAP050470-C	Capacitor	DISK TYPE, CERAMIC, 50V"NPO"47P	2	C106,130
CAP050680-C	Capacitor	DISK TYPE, CERAMIC, 50V"NPO"68P	1	C123
CAP050331-C	Capacitor	DISK TYPE, CERAMIC, 50V"NPO"330P	1	C128
CAP050271-C	Capacitor	DISK TYPE, CERAMIC, 50V270P	2	C131,132
CAP050102-C	Capacitor	DISK TYPE, CERAMIC, 50V102P	2	C108,124
CAP050473-C	Capacitor	DISK TYPE, CERAMIC, 50V473P	1	C24
CAP050104-C	Capacitor	DISK TYPE, CERAMIC, 50V104P	4	C03 08 23 140
CAP063101-E	Capacitor	ELECTROLYTIC"MHA"100/63V	2	C122 127
CAP063471-E	Capacitor	ELECTROLYTIC"MHA"470/63V	2	C32 33
CAP025222-E	Capacitor	ELECTROLYTIC"WL"2200/25V	2	C21 22
CAP063222-E	Capacitor	ELECTROLYTIC"SHL"2200/63V	2	C34 35
<i>Resistors</i>				
RES68001/8-F	Resistor	METAL FILM 1/8WF680	1	R109
RES56001/8-F	Resistor	METAL FILM 1/8WF560	1	R112
RES12011/8-F	Resistor	METAL FILM 1/8WF1.2K	1	R124
RES47011/8-F	Resistor	METAL FILM 1/8WF4.7K	3	R106,107,09
RES56011/8-F	Resistor	METAL FILM 1/8WF5.6K	3	R113,114,121
RES94011/8-F	Resistor	METAL FILM 1/8WF9.4K	2	R105,205
RES10021/8-F	Resistor	METAL FILM 1/8WF10K	5	R111,115,116,215,216
RES12021/8-F	Resistor	METAL FILM 1/8WF12K	1	R273
RES22021/8-F	Resistor	METAL FILM 1/8WF22K	2	R100,200
RES47021/8-F	Resistor	METAL FILM 1/8WF47K	8	R101,102,103,104,201,202,203,204
RES10521/8-F	Resistor	METAL FILM 1/8WF10.5K	1	R08
RES1001/8-J	Resistor	CARBON FILM 1/8W10	7	R15,142,143,151,152,156,157
RES4701/8-J	Resistor	CARBON FILM 1/8W47	7	R33 34 35 38 39 40 128
RES1011/8-J	Resistor	CARBON FILM 1/8W100	1	R108
RES1211/8-J	Resistor	CARBON FILM 1/8W120	1	R132
RES5611/8-J	Resistor	CARBON FILM 1/8W560	3	R140,150,158
RES6811/8-J	Resistor	CARBON FILM 1/8W680	1	R123
RES7511/8-J	Resistor	CARBON FILM 1/8W750	1	R16
RES8211/8-J	Resistor	CARBON FILM 1/8W820	1	R131
RES1021/8-J	Resistor	CARBON FILM 1/8W1K	9	R117,118,122,217,218,07 17 32 37
RES1521/8-J	Resistor	CARBON FILM 1/8W1.5K	4	R25,125,129,160
RES4721/8-J	Resistor	CARBON FILM 1/8W4.7K	4	R01,02,11,12
RES8221/8-J	Resistor	CARBON FILM 1/8W8.2K	1	R05
RES1031/8-J	Resistor	CARBON FILM 1/8W10K	5	R13,14 45 46,272
RES1131/8-J	Resistor	CARBON FILM 1/8W11K	1	R137
RES1231/8-J	Resistor	CARBON FILM 1/8W12K	1	R127

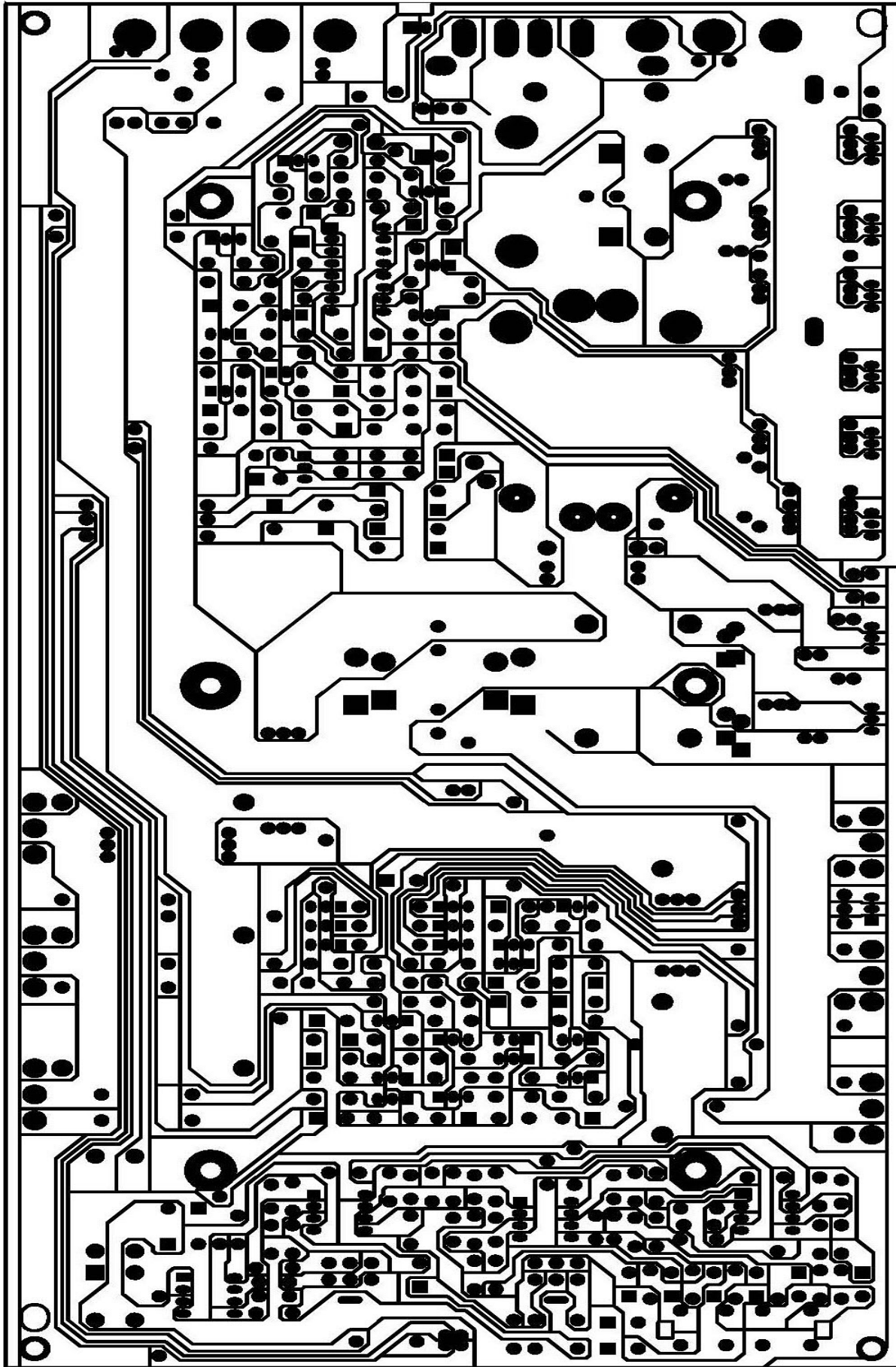
GT5-A3011

Part Number	Description		Qty	Reference Designator
MAIN PCB				
RES1531/8-J	Resistor	CARBON FILM 1/8W15K	4	R20,21,110,161
RES2231/8-J	Resistor	CARBON FILM 1/8W22K	4	R22,18 24 126
RES3331/8-J	Resistor	CARBON FILM 1/8W33K	1	R19
RES4331/8-J	Resistor	CARBON FILM 1/8W43K	1	R10
RES4731/8-J	Resistor	CARBON FILM 1/8W47K	1	R23
RES5631/8-J	Resistor	CARBON FILM 1/8W56K	2	R04,165
RES1041/8-J	Resistor	CARBON FILM 1/8W100K	2	R119,219
RES2241/8-J	Resistor	CARBON FILM 1/8W220K	1	R44
RES4341/8-J	Resistor	CARBON FILM 1/8W430K	1	R06
RES2211/4-J	Resistor	CARBON FILM 1/4WJ220/0.25W	2	R31 36
RES4R71/2-J	Resistor	METAL FILM 1/2WJ4.7/0.5W	1	R261
RES1001/2-J	Resistor	METAL FILM 1/2WJ10/0.5W	3	R03,138,145
RES1011/2-J	Resistor	METAL FILM 1/2WJ100/0.5W	2	R133,134
RES2421/2-J	Resistor	METAL FILM 1/2WJ2.4K/0.5W	1	R47
RES1012-J	Resistor	MOR, 2WJ100/2W	1	R41
RES1512-J	Resistor	MOR, 2WJ150/2W	2	R42 43
RES6812-J	Resistor	MOR, 2WJ680/2W	1	R264
RES0R15-J	Resistor	MOR, 5WJ0.1/5W	6	R147,148,153,154,159,188
3B20Kx2	Level Pot	B20Kx2V12L5 15S-3B20Kx2	1	VR101
15C50Kx2	Freq Pot	15C50Kx2V12L5 15S-15C50Kx2	1	VR102
<i>Semiconductors</i>				
TR-KTA1266GR	Transistor	SMALL SIGNAL PNP,TO-92KTA1266GR	4	Q03, 04, 08, 09
TR-KTA1268GR	Transistor	SMALL SIGNAL PNP,TO-92KTA1268GR	5	Q06,102,103,107,108
TR-KTC3198BL	Transistor	SMALL SIGNAL NPN,TO-92KTC3198BL	1	Q05
TR-KTC3198GR	Transistor	SMALL SIGNAL NPN,TO-92KTC3198GR	4	Q02,07,131,132
TR-KTC3200GR	Transistor	SMALL SIGNAL NPN,TO-92KTC3200GR	4	Q104,105,106,130
TR-KTA1023Y	Transistor	SMALL SIGNAL PNP,TO-92KTA1023Y	4	Q01,113,122,125
TR-KTC1027Y	Transistor	SMALL SIGNAL NPN,TO-92KTC1027Y	4	Q109,112,119,123
DIODE-1N4148	Diode	SWITCHING SIGNAL1N4148	10	D03,04,05,08,09,101,102,103,104,105
DIODE-1N4004	Diode	RECTIFIER1N4004	1	D01
DIODE-FR154	Diode	FAST RECOVERYFR154/1504	4	D11, 12, 13, 14
DIODE-1N4744	Diode	ZENER, 15V/1W1N4744	2	D15,16
IC-TL494CN	IC	PWM IC,DIP-16TL494CN	1	U01
IC-NJM2068D	IC	DUAL OP AMP,DIP-08NJM2068D	4	U101,102,103,104
FET-K30AGR	FET	N-CH JFET,TO-92KTK30AGR	2	Q17, 101
FET-50N60P	FET	N-CH POWER MOS FET,TO-220KEC50N60P	6	Q11 12 13 14 15 16
TR-KTC5242A	Transistor	AUDIO POWER NPN,TO-3PKTC5242A	3	Q111,116,124
TR-KTA1962A	Transistor	AUDIO POWER PNP,TO-3PKTA1962A	3	Q117,120,126
TR-KTC3200GR1	Transistor	SMALL SIGNAL NPN,TO-92KTC3200GR	1	Q110
DIODE-1N5404	Diode	RECTIFIER1N5404	1	D02
DIODE-YG225D2	Dual Diode	FAST RECOVERY, TO-220YG225D2	2	D06 07
LED0	Green/Red LED	3PHI, GREEN & REDL-H322005GB	1	LED01
LED1	Logo LED's	ACYLE 3.0 AWG#24,RED/BLACK200m/m	1	CONN01
<i>Miscellaneous</i>				
RET94011/8-F	Thermistor	DISK TYPE,NTC 50KFTD5-350	1	TH01
CORE-GT3011	Transformer	37PHI,ISU37PHI 6t(0.7x15):21(0.7x5)+9t(0.7x1)	1	T01
CORECL-310	Inductor	BAR CORECL-310	1	L01
CORECL-510	Inductor	BAR CORECL-510	2	L02 03
TER-3P	3P terminal	PLATED,3P,POWERJSZ3-02	1	P01
TER-4P	4P terminal	PLATED,4P,SPEAKER JSZ4-03	1	P02
AV4-8.4-13A	RCA Jack	PLATED(TOP:WHITE, BOTTOM:RED)AV4-8.4-13A	1	RCA01
20PWF-9404	2PWF-9404	Dual Fuse holder with fuse	1	FH01
PLAL0640-02P	2P connector	2PLAL0640-02P	1	CONN01
JUMPER-37MM	Copper bar	NI-PLATE37m/m	1	BJ01
JUMPER-55MM	Copper bar	NI-PLATE55m/m	1	BJ02
W-60MM	GNG wire	1007,AWG#24,4.5PHI RING LUG60m/m	1	W1
FIBER8-200	Paper pad	FIBER, 200.0x8.0x0.5t	0.5	for FET
FIBER6-200	Paper pad	FIBER, 200.0x6.0x0.5t	0.5	for POWER TR

REV	DESCRIPTION	DATE
1		
2		



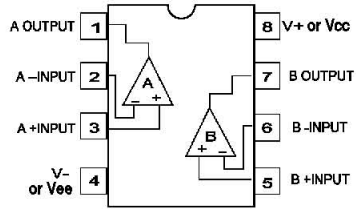
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UNIT	SCALE	DATE	MODEL	GT5-A3011
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DRAW	CHECK	APPRO	NAME	
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			CODE NO.	ISSUE
				1/1



Semiconductors

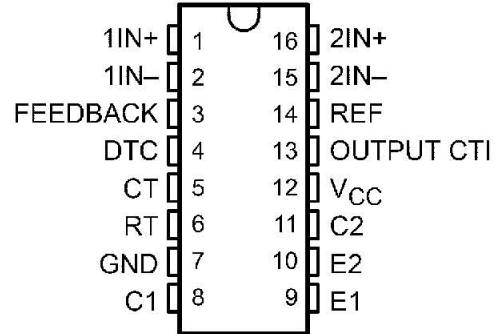
NJM2068L DUAL OP-AMP

U101,102,103,104



TL494CN PWM

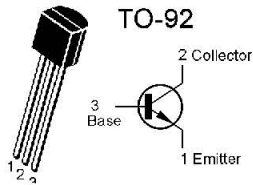
U01



KTC3200 Q104,105,106,110,130

KTC1027Y Q109,112,119,123

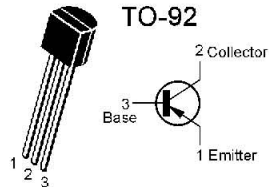
KTC3198 Q02,05,07,131,132



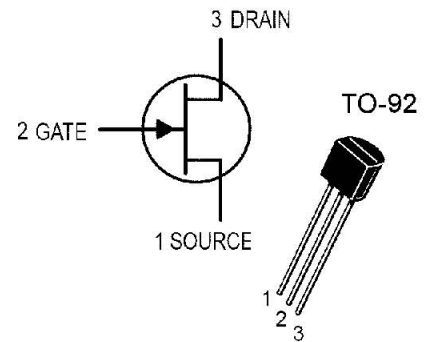
KTA1268 Q06,102,103,107,108

KTA1023 Q01,113,122,125

KTA1266 Q03,04,08,09

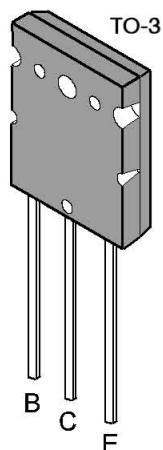


KTK30AGR FET Q17,101



KTC5242A Q111,116,124

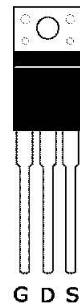
KTA1962A Q117,120,126



KMB050N60P MOSFET

Q11-16

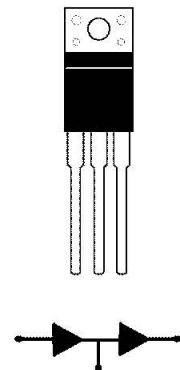
TO-220



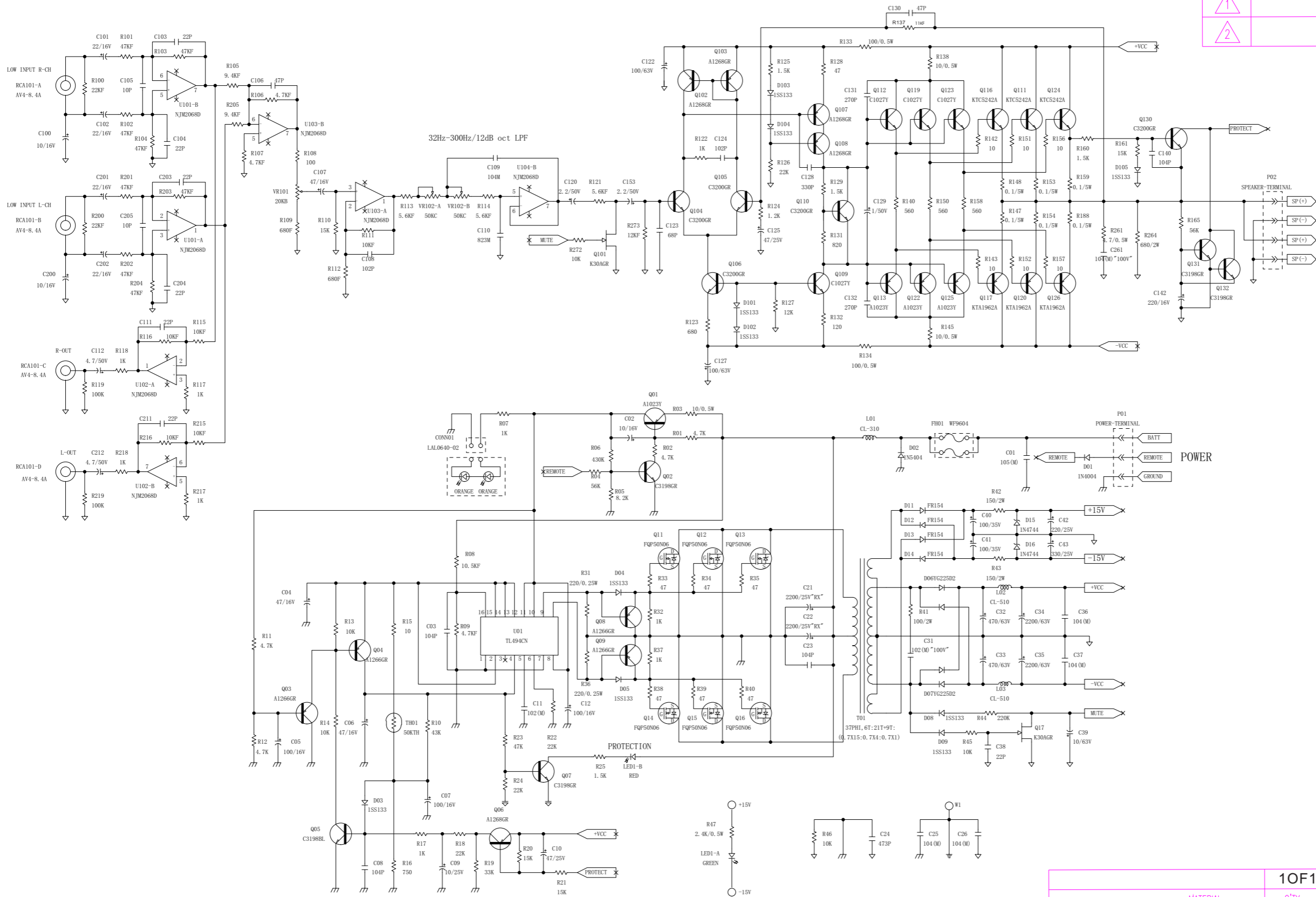
YG225D2
DUAL DIODE

D06,07

TO-220



REV	DESCRIPTION	DATE
1		
2		



MATERIAL		10F1	REMARK	
UNIT	SCALE	Q'TY	SPECIFICATION	
MM		2008. 10. 10	MODEL	GT5-A3011
DRAW	CHECK	APPRO	RELA DRAW NO	
			NAME	GT5-A3011 SCH
CODE NO.				ISSUE
				1/1